

WHAT IS CLAIMED IS:

1. A method for loading bricks comprising the steps of:

providing a kiln car having furniture defining multiple support levels, the furniture including vertical posts made of silicon carbide, and wherein each of the support levels includes a plurality of horizontal support beams made of silicon carbide, each of the horizontal support beams being mounted to extend between a pair of the posts, and a plurality of generally parallel, horizontal cross-beams extending between the support beams, the kiln car having opposite proximal and distal ends;

positioning the kiln car between a first machine and a second machine, the first machine including a first carriage with a conveyor, the second machine including a second carriage with rollers, the proximal end facing the first carriage, and the distal end facing the second carriage, the second carriage having a plurality of spaced-apart rollers;

placing a low set stack of bricks in need of firing on the conveyor of the first carriage;

positioning the first and second carriages to a position where the spaced-apart rollers of the second carriage rise between the cross-beams and extend vertically above a selected one of the multiple support levels;

driving the conveyor of the first carriage and the rollers of the second carriage to convey a low set stack of bricks from the first carriage to the second carriage; and

lowering the second carriage until the low set stack of bricks rests directly on the cross-beams of the first level of the kiln car.

2. The method of claim 1, where the step of positioning the first and second carriages to a position where the spaced-apart rollers of the second carriage rise between the cross-beams and extend vertically above a selected one of the multiple support levels further comprises the steps of:

vertically moving the first carriage to a position wherein the conveyor is at a vertical height slightly lower than a selected one of the multiple support levels;

horizontally extending the second carriage under the selected level to a position wherein the second carriage is adjacent to the first carriage; and

elevating the first and second carriages so that the spaced-apart rollers of the second carriage rise between the cross-beams and extend vertically above the selected level.

3. The method of claim 1, further comprising the step of horizontally withdrawing the second carriage.

4. The method of claim 1 wherein the furniture defines four support levels.

5. The method of claim 1 wherein the selected level in the step of vertically moving first includes moving the kiln car is the upper most level of the kiln car.

6. The method of claim 1 wherein the horizontal support beams are mounted to the vertical posts using at least one of a lug, an opening formed in the vertical post, and a pin.

7. The method of claim 1 further comprising
placing at least one work piece in need of firing on the first carriage;
vertically moving the first carriage to a position wherein the conveyor is at a height slightly below a different selected level of the kiln car;
horizontally extending the second carriage under said different selected level to a position wherein the second carriage is adjacent to the first carriage;
elevating the first and second carriages to a position where the rollers of the second carriage extend above the horizontal beams of said different selected level;
driving the conveyor of the first carriage and the rollers of the second carriage to move the work piece from the first carriage to the second carriage;
lowering the second carriage until the work piece rests on the base of the second level of the kiln car; and
withdrawing the second carriage from the kiln car.

8. The method of claim 7 wherein the second level of the kiln car is below the first one of the multiple levels of the kiln car.

9. A method of unloading a kiln car comprising:

providing a kiln car having furniture defining multiple support levels supporting a low set stack of bricks, the furniture including vertical posts made of silicon carbide, and wherein each of the support levels includes a plurality of horizontal support beams made of silicon carbide, each of the horizontal support beams being mounted to extend between a pair of the posts, and a plurality of generally parallel, horizontal cross-beams extending between the support beams to support the bricks, the kiln car having opposite proximal and distal ends;

positioning the kiln car between a first machine and a second machine, the first machine including a first carriage with a conveyor, the second machine including a second carriage with rollers, the proximal end facing the first carriage, and the distal end facing the second carriage, the second carriage having a plurality of spaced-apart rollers;

vertically moving the first carriage to a position wherein the conveyor is slightly below a selected one of the levels supporting the low set stack of bricks;

horizontally extending the second carriage under said selected level to a position wherein the second carriage is adjacent to the first carriage;

elevating the first and second carriages so that the spaced-apart rollers of the second carriage rise between the cross-beams and extend vertically above the selected level, thereby lifting the low set stack of bricks to rest on the rollers of the second carriage;

driving the conveyor of the first carriage and the rollers of the second carriage to move the low set stack of bricks from the second carriage to the rollers of the first carriage;

lowering the second carriage free of the cross beams; and

withdrawing the second carriage from the kiln car.

10. The method of claim 9, wherein the first one of the multiple levels of the kiln car containing the low set stack of bricks is the lowest most level of the kiln car.

11. The method of claim 9, wherein the furniture has four levels.

12. The method of claim 9, the method including the step of rotating the cross beams.

13. The method of claim 9 wherein the horizontal support beams are mounted to the vertical posts using at least one of a lug, an opening formed in the vertical post, and a pin.

14. A system for loading a kiln car comprising:
a kiln car including a chassis, wheels mounted to the chassis to rollably support the chassis, and furniture supported on the chassis, furniture defining multiple support levels, the furniture including vertical posts made of silicon carbide, each of the posts being securely fixed relative to the chassis, and wherein each of the support levels includes a plurality of horizontal support beams made of silicon carbide, each of the horizontal support beams being mounted to extend between a pair of the posts, and a plurality of generally parallel, horizontal cross-beams extending between the support beams, the kiln car having opposite proximal and distal ends, each of the levels being configured to support at least one low set stack of bricks;

a first machine comprising a first carriage containing a conveyor and a means for driving the conveyor to convey a stack of bricks; and

a second machine comprising a second carriage containing rollers to convey a stack of bricks and a means for driving the rollers, wherein the at least some of the rollers are spaced apart to fit between the horizontal beams of a selected one of the levels, permitting the rollers to extend vertically above the horizontal beams;

wherein the second carriage is positionable close to the first machine to convey a stack of bricks between the carriages.

15. The system of claim 14, wherein the furniture has four levels.

16. The method of claim 14 wherein the horizontal support beams are mounted to the vertical posts using at least one of a lug, an opening formed in the vertical post, and a pin.

17. A method for loading bricks comprising the steps of:
providing a kiln car having furniture, the furniture including vertical posts and horizontal support beams made of silicon carbide, the horizontal support beams being

mounted at vertical increments defining multiple levels, the furniture further including a plurality of cross beams, each of the cross beams configured to fit between pairs of the horizontal support beams, the cross beams configured for holding a low set stack of bricks and adapted to accepting a fork that can support the cross beams and bricks thereon;

moving the fork to supportably engage the cross beams in a brick loading area, the cross beams supporting a low set stack of bricks;

maneuvering the fork and cross beams between horizontal support beams generally to a selected one of the multiple levels;

placing the cross beams on the horizontal support beams; and

withdrawing the fork from the tray.

18. The method of claim 17, wherein the horizontal support beams are mounted to the vertical posts using at least one of a lug, an opening formed in the vertical post, and a pin.

19. A method for firing bricks comprising the steps of:

providing a kiln car having furniture, the furniture including vertical posts and horizontal support beams made of silicon carbide, the horizontal support beams being mounted at vertical increments defining multiple levels, the furniture further including a plurality of cross beams, each of the cross beams configured to fit between pairs of the horizontal support beams, the cross beams configured for holding at least one low set stack of bricks;

disposing at least one low set stack of bricks on the cross beams of each level of the kiln car, wherein each low set stack of bricks is located between the vertical support beams and air space occupies the area along the sides and top of each low set stack of bricks; and
passing the kiln car through a tunnel kiln.

20. The method of claim 19, wherein the kiln car includes four levels.

21. The method of claim 19, wherein the horizontal support beams are mounted to the vertical posts using at least one of a lug, an opening formed in the vertical post, and a pin.